AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions, and listings, of claims in the application.

1. (Currently Amended) A communication system including:

a plurality of mobile stations; and

a base station system communicating with the mobile stations and providing the mobile stations with a plurality of application services through communication based on a non-network protocol between the mobile stations, which travel on a road, and the base station system, which is installed along the road, wherein each of the mobile stations and the base station system comprises

a transfer service processing entity implementing data transfer among the plurality of applications, wherein the transfer service processing entity identifies an application, with one of the mobile stations and the base station system as a sending source, from among the plurality of applications, utilizing port numbers; and

a transaction management entity providing unidirectional data transmission and request-response transactions, wherein the transaction management entity identifies a unit of a transaction between a mobile station and the base station system utilizing a transaction ID uniquely identifying a corresponding port number and an identifier designated by and identifying a respective application, of the plurality of applications, and the transaction management entity includes

undelivered data segment resending means for resending undelivered data segments of a message,

data sending/receiving means for sending and receiving each message of a plurality of messages, and

message segmenting/assembling means for segmenting a message generated by an application into a plurality of data segments and assembling a plurality of data segments of a message into the message.

Claims 2-10 (Cancelled).

11. (Previously Presented) The communication system according to claim 1, wherein

the transaction management entity of a sending station, of the mobile station and the base station system, divides a message into a plurality of data segments and adds to each of the data segments the transaction ID corresponding to the respective port number and one of sequential numbers for transaction identification and sends the message as the plurality of data segments with the transaction ID and sequential numbers, and

the transaction management entity of a receiving station, of the mobile stations and the base station system, reassembles the message sent by combining the data segments having identical transaction IDs, in an order based on the sequential numbers.

12. (Previously Presented) The communication system according to claim 11, wherein the transaction management entity, in dividing a message into data segments, controls duration between transmissions of data segments, depending on status of a sending queue in a lower layer.

13. (Previously Presented) The communication system according to claim 11, wherein, when the transaction management entity of a receiving station, of the mobile stations and the base station system, receives a final data segment of the message, the transaction management entity of the receiving station notifies the transaction management entity of the sending station of the sequential numbers of any undelivered data segments, and the undelivered data resending means of the transaction management entity of the sending station resends only the undelivered data segments.

Claim 14 (Cancelled).

15. (Previously Presented) The communication system according to claim 11, wherein, when the transaction ID, in a newly received data segment is identical to the transaction ID of a data segment that has been previously received, the transaction management entity handles the newly received data segment identically to the data segment that has been previously received.

16. (Previously Presented) The communication system according to claim 11, wherein the transaction management entity has a bulk area indicating a buffer region for assembling data segments into a message, and a bulk size indicating size of the buffer region designated by an application, of the plurality of applications.

17. (Previously Presented) The communication system according to claim 1, wherein, when the transaction ID, in a newly received data segment is identical to the transaction ID of a data segment that has been previously received, the transaction management entity handles the newly received data segment identically to the data segment that has been previously received.

18. (Previously Presented) The communication system according to claim 1, wherein the transaction management entity aborts a transaction having a transaction ID identical to a transaction ID corresponding to the port number for which the corresponding application had made an abort request.

19. (Currently Amended) A communication system including:

a plurality of mobile stations; and

a base station system communicating with the mobile stations and providing the mobile stations with a plurality of application services through communication

based on a non-network protocol between the mobile stations, which travel on a road, and the base station system, which is installed along the road, wherein each of the mobile stations and the base station system comprises

a transfer service processing entity, wherein the transfer service processing entity sends a list of accessible ports of the transfer service processing entity to a sending station, of the mobile stations and the base station system, when a Dedicated Short-Range Communication (DSRC) connection notification is received from the sending station; and

a transaction management entity providing unidirectional data transmission and request-response transactions, wherein the transaction management entity of the sending station sends, upon receipt of the list of accessible ports, transaction start enable information to an application which has requested starting of a transaction with a port that is included in the list of accessible ports, so that the application starts the transaction, and the transaction management entity includes

undelivered data segment resending means for resending undelivered data segments of a message,

data sending/receiving means for sending and receiving each message of a plurality of messages, and

message segmenting/assembling means for segmenting a message generated by an application into a plurality of data segments and assembling a plurality of data segments of a message into the message.

20. (Currently Amended) ~~A~~ The communication system ~~including: a plurality of mobile stations and a base station system communicating with the mobile stations and providing the mobile stations with a plurality of application services through communication based on a non-network-type protocol between the mobile stations, which travel on a road, and the base station system, which is installed along the road, wherein each of the mobile stations and the base station system comprises~~ according to claim 19, wherein

~~a~~the transfer service processing entity ~~implementing~~

implements data transfer among the plurality of applications, ~~the transfer service processing entity identifying~~ and

identifies an application of one of the mobile stations and the base station system as a sending source, from among the plurality of applications, utilizing port numbers~~;~~, and ~~a transaction management entity providing unidirectional data transmission and request-response transactions, wherein~~

the transaction management entity

sends, upon receipt of a Dedicated Short-Range Communication (DSRC) connection notification, transaction enable information to an application which has requested starting of a transaction, without a port number, so that the application starts the transaction, and ~~the transaction management entity~~

sends a transaction abort request to the application that has started the transaction when the transaction management entity receives from a sending station, of the mobile stations and the base station system, a notification that the port number of the application is not effective~~, and undelivered data segment resending means for resending undelivered data segments of a message, data sending/receiving means for sending and receiving each message of a plurality of messages, and message segmenting/assembling means for segmenting a message into a plurality of data segments and assembling a plurality of data segments of a message into the message~~.

21. (New) The communication system according to claim 1, wherein

the transfer service processing entity includes a control protocol for realizing concurrent applications on the dedicated short-range communication protocol ARIB STD-T75, and the application sub-layer extended link control protocol ASL-ELCP, and

the transaction management entity includes a communication protocol that intervenes between the transfer processing entity and the plurality of applications.

22. (New) The communication system according to claim 19, wherein

the transfer service processing entity includes a control protocol for realizing concurrent applications on the dedicated short-range communication protocol ARIB STD-T75, and the application sub-layer extended link control protocol ASL-ELCP, and

the transaction management entity includes a communication protocol that intervenes between the transfer processing entity and the plurality of applications.

23. (New) A method for providing a non-network wireless data transmission from a first station to a second station, the method comprising:

receiving a message for a transaction from a first application running on the first station, wherein

the first application is identified by a source port number of a first non-TCP port of the first station, and the transaction is identified by a transaction identifier, and

the message is destined for a second, application running on the second station, and the second application is identified by a destination port number of a second non-TCP port of the second station;

dividing the message into a plurality of segments, wherein each of the segments is identified by a sequential number corresponding to the respective segment;

generating a series of packets, wherein each of the packets includes one of the plurality of segments, the sequential number corresponding to the respective segment, the transaction identifier, the source port number, and the destination port number;

transmitting the plurality of segments from the first station to the second station; and

assembling the plurality of segments received to recover the message in accordance with the sequential numbers, the transaction identifier, the source port number, and the destination port number.

24. (New) The method of claim 23, further including:

receiving an open port request from the first application running on the first station, wherein the open port request includes the source port number identifying the first application; and

updating a port list of the first station to include the source port number.

25. (New) The method of claim 24, further including:

sending a packet including one of the segments from the first station to the second station;

starting a timer at the first station;

determining whether an acknowledgement corresponding to the packet is not received by the first station before the expiration of the timer; and

retransmitting the packet from the first station to the second station if the acknowledgement corresponding to the packet is not received by the first station before the expiration of the timer.

26. (New) The method of claim 24, further including:

receiving at the second station a packet including one of the plurality of segments; and

transmitting an acknowledgement corresponding to the packet.